



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Levy

SERIAL NO.: 10/723,271 GROUP ART UNIT: 1724

FILED: November 26, 2003 EXAMINER: Cintins

FOR: WATER PURIFICATION APPARATUS AND SYSTEM

ATTORNEY DOCKET NO.: 40654/283695

Commissioner for Patents
P. O. Box 1450 Alexandria,
VA 22313-1450

DATE: January 9, 2007

DECLARATION UNDER 37 C.F.R. § 1.132

Sir:

I, Ehud Levy, declare as follows:

1. I am above the age of 21 years and am competent to make this declaration.
2. I am the named inventor of the above-identified patent application.
3. I have read and understood the Office action issued in the above-identified patent application dated November 8, 2006 and the references cited therein.
4. In order to further illustrate the non-obvious nature of the invention claimed in the above-mentioned patent application, the following experiments were carried out by me or at my direction by individuals under my control.
5. In Experiment 1 and Comparative Experiment 1 described in more detail below, the same water supply (Atlanta city water), cartridge design, and test rig were used, and the same 60 second on/off cycle and NSF turbidity test method was employed.

6. In Experiment 1, 115 in³ of catalytic char, having a particle-size distribution of 80 x 325 mesh were introduced into the outer annular space of a filtration cartridge having a 10 micron rated carbon block core, and 10 micron rated polyethylene shell. Water at 100 psi was passed through the filter for 60 seconds. The water flow was discontinued for 60 seconds, and then another 60 second flow was initiated. Effluent water was sampled after each cycle and tested for turbidity. The results were obtained as indicated below:

Cycle Number	Turbidity (NTU)
1	4
2	0.001
10	0.001
169	0.001
567	0.001
671	0.001


7. In Comparative Experiment 1, 115 in³ of activated carbon powder, having a particle size distribution of 80 x 325 mesh were introduced into the outer annular space of a filtration cartridge having a 10 micron rated carbon block core, and 10 micron rated polyethylene shell. Water at 100 psi was passed through the filter for 60 seconds. The water flow was discontinued for 60 seconds, and then another 60 second flow was initiated. Effluent water was sampled after each cycle and tested for turbidity. The results were obtained as indicated below:

Cycle Number	Turbidity (NTU)
1	29
2	26
3	24
67	37
128	25

8. The results show that when activated char is used, moderate turbidity is initially observed, but that this rapidly clears, and remains clear, over a long period of time. By contrast, when activated carbon powder is used, initial turbidity is much higher than with activated char, and the turbidity remains high over a significant number of cycles. In addition, after 671 cycles, the activated carbon powder had lost 13.2 % of its starting mass. This difference is significant because increased turbidity leads to decreased consumer acceptance of the filtration system, and can indicate an increased health risk. The difference in result is unexpected.

9. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

5.1.07
Date


Ehud Levy